

UDC: 620.193.5

TSEYTLIN, Kh. L., SOROKIN, Yu. I., BALASHOVA, A. A., BABITSKAYA, S. M.,
LEVIN, Ya. S., KONYUSHENKO, A. T., GOLDYKIN, R. V., and LADYZHINSKIY, B. S.,
Scientific Research Institute of Organic Intermediates and Dyestuffs

"High-Temperature Corrosion of Metals in Gaseous Ammonia"

Moscow, Zashchita Metallov, Vol. 6, no. 4, 70, pp 451-454

Abstract: Processes involving the use of ammonia are known to cause corrosion of equipment. The homogeneous reaction of ammonia dissociation in the gas phase begins above 1200--1300°C. In the presence of a catalyst this temperature drops to 300--400°C. Experiments have shown that the type of metal considerably affects the thermal dissociation of ammonia and that this effect is a function of temperature. This study describes in detail the testing and effects of gaseous ammonia on KhN10T steel, KhN78T, N70M27F, and Kh15N55M16V alloys, VT-1 titanium, and MZS copper. The analysis of experimental data shows that there is a fundamental correspondence between the effect of metals on ammonia dissociation and their resistance. Therefore, to insure continuous service of equipment in gaseous ammonia, it is advisable to use materials which

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TSEYTLIN, Kh. L., et al, Zashchita Metallov, Vol 6, no. 4, 70, pp 451-454

will not readily catalyze ammonia dissociation. Materials which are suitable for service under these conditions include carbon steel and N70M27F, Kh15N5516V alloys up to 400°C; Kh18N10T steel and nickel up to 300°C; KhN78T up to 600°C; aluminum, titanium, and copper up to 450°C. Considering the low specific gravity, good technological properties, relative availability, and low cost of aluminum, this metal is preferred in selecting materials for equipment operated in gaseous ammonia at high temperatures. A table illustrating the performance of the above metals during 400 hours of testing with gaseous ammonia at high temperatures, including corrosion rate, tensile strength, relative elongation, % and Vickers hardness, prior to and after the experiment, is given in the original article.

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USSR

BARITSKIY, A. F. and KRAVCHENKO, A. M., Institute of Hydromechanics, Ukrainian Academy of Sciences

"Conductometric Measurement of Volume Concentrations of the Components of a Two-Phase Flow"

Kiev, Gidromekhanika, No 20, 1972, pp 92-95

Abstract: Among methods used in industry for determining volume concentrations, those based on variation in electrical properties are most widely employed, and are apparently the most accurate (the so-called conductometric methods). The authors ran tests, using a probe inserted in a two-phase flow directed perpendicularly against an electrode plane, to determine volume concentration on the basis of electrical conductivity.

It was concluded that the accuracy of measurements from a given electrical circuit depends substantially on temperature constance of the surrounding medium. A number of hours of testing the apparatus in ordinary room conditions showed reading errors of about 5 percent. Greater accuracy can evidently be achieved through thermostatic control of the apparatus, among other corrective measures.

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USSR

UDC 621.81.539.431

POCHTENNY, Ye. K. and BABITSKIY, M. S., Candidates of Technical Sciences,
and GURSKIY, V. A., Engineer

"Statistical Estimate of Cyclical Strength at Stress Above the Yield Point"

Moscow, Vestnik Mashinostroyeniya, No 7, June 1972, pp 17-20

Abstract: Loads acting upon machine parts under operating conditions bring about stress in the part material in one of the following ranges: a) prior to the cyclical yield point, the stresses fail to bring about even local fatigue damage of the parts; b) stress action within the range between the cyclical yield point and the endurance limit brings about local fatigue damage, but does not cause destruction of the parts; c) with stress action within the range between the endurance limit and the breaking point, damage of the parts is completed by destruction.

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USSR

UDC: 8.74

BARITSKIY, V. A., KALATSKAYA, L. V.

"Software for a Multiterminal Teaching and Computer System Based on the Minsk-2/22"

Mat. i Inform. Probl. Prognoz. i Upr. Naukon [Mathematics and Information Problems of Prediction and Control of Science--Collection of Works], Kiev, 1971, pp 194-201 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V578, by V. Ostrovskiy)

Translation: A time-sharing system is described. Three operating modes of the system are provided: teaching, author and teacher. The last two modes provide high teaching effectiveness. The system stores and edits incoming information and collects statistical data on the course of teaching. The user relates to the system using a control language which is invariant relative to the contents of the course being studied. The structure of the system is traditional: a supervisor in a certain sequence runs the editor, monitor or one of the service programs. If the system is operating at less than full load, batch problems are activated. Requests for servicing are satisfied in order of arrival (without quantization of the servicing interval of each request).

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USSR

UDC 534.014

BABITSKIY, V.I. and IZRAILOVICH, M.YA.

"Synthesis of a Self-Oscillating Vibration-Shock System"

Moscow, Mashinovedeniye, No 3, May-Jun 71, pp 11-18

Abstract: The synthesis of self-oscillating systems in relation to changes of basic parameters from nominal was investigated. Formulas and graphic analyses were compiled to show relative effects of mutual changes of parameters including period to coefficient of restoration, shock velocity to coefficient of restoration, and impulse to coefficient of restoration, all of which depend on the slope of a switching function. For certain desired parameters, it is possible to derive remaining parameters from the formulas and graphs. Derived parameters include a sensitivity coefficient related to the departure magnitude of the coefficient of restoration from nominal values. A method was described for decreasing the system sensitivity to changes in the coefficient of restoration. This method is shown to consist of selecting those optimum parameters from the synthesized formulas which will afford the desired results for a given oscillating system.

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USSR

BABIY, A. N.

"Extremal Problem of Driving of Mine Shafts"

Kibernet. i Vychisl. Tekhn. Resp. Mezhd. Sb. [Cybernetics and Computer Technology. Republic Interdepartmental Collection], 1973, No 19, pp 72-79 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V589, by the author).

Translation: A stochastic model of the process of driving a shaft trunk is studied. It is demonstrated that the optimal dimensions of the process should be a solution of a problem in nonlinear programming.

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UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--FUNCTIONAL AND STRUCTURAL PECULIARITIES OF TRANSPORT RNA IN
BIOSYNTHESIS OF PROTEIN WITH SOME PHYSIOLOGICAL STATES OF ANIMALS -U-
AUTHOR--(05)-MATSUKA, H.KH., BABIY, T.P., SKVIRSKA, YE.B., KOVALENKO, M.Y.,
ELSKA, A.V.

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PROCESSING DATE--02OCT70

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRANSPORT RNA MANIFEST FUNCTIONAL AND STRUCTURAL PECULIARITIES AT THE CORRESPONDING PHYSIOLOGICAL STATES OF AN ORGANISM WHEN CONSIDERABLE QUALITATIVE AND QUANTITATIVE CHANGES OCCUR IN PROTEIN BIOSYNTHESIS. THESE PECULIARITIES ARE MANIFESTED IN THE FOLLOWING. THE AMOUNT OF ISOACCEPTOR LEUCIN T-RNA CHANGES IN THE MAMMARY GLAND. ONE FRACTION OF LEUCIN T-RNA REMAINS INSTEAD OF TWO WITH TRANSITION FROM THE LACTATE STATE INTO THE INVOLUTION. BESIDES, THE QUANTITATIVE RATIOS OF SUCH RNA AS GLUTAMINIC AND PHENYL ALANINE IS CHANGED IN THE LACTIC GLAND WITH THE BEGINNING OF THE SYNTHESIS OF MILK PROTEINS. GOPHERS, BEING AT THE STATE OF HIBERNATION, THE AMOUNT OF GLYCINE ISOACCEPTOR T-RNA OF LIVER DECREASES FROM THREE UP TO TWO IN COMPARISON WITH THE ANIMALS AT THE STATE OF VIGIL. IN RABBITS UNDER CONDITIONS OF STARVATION SUCH T-RNA AS PHENYL ALANINE, GLYCINE, METHIONINE, LYSINE, LEUCINE AND TYROSINE IS CONSIDERABLY LOWER THE ABILITY TO ACCEPT AMINO ACIDS. THE SAME IS SHOWN IN EXPERIMENTS WITH METHIONINE T-RNA OF RAT LIVER. THE RESULTS OBTAINED TESTIFYING IN FAVOUR OF THE FACT THAT DECREASE OF ACCEPTOR ACTIVITY OF T-RNA WITH STARVATION IS A RESULT OF POSSIBLE CONFORMATION CHANGES IN MOLECULE OF T-RNA. IT IS ESTABLISHED THAT THE LOST ACCEPTOR ABILITY OF T-RNA OF FASTENED RABBITS AND RATS IS ALMOST COMPLETELY RESTORED AFTER HEATING OF T-RNA IN THE PRESENCE OF MAGNESIUM IONS. BESIDES, TYROSINE T-RNA OF RABBIT LIVER RESTORES ITS ACCEPTOR PROPERTIES WITH HEATING OF T-RNA IN THE PRESENCE OF MANGANESE AND CALCIUM IONS.

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USSR

UDC 632.95:634.11

BABIY, V. S., and TSVETKOVA, A. G., All Union Scientific Research Institute
of Biological Methods of Plant Protection

"Reaction of the Apple Trees Towards Various Concentrations of Pesticides
Used in Small Volume Spraying"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 7 (105), 1972, pp 31-33

Abstract: In small volume spraying the concentration of pesticides may be lowered by 25% without decreasing its technical effectiveness. The study was carried out on apple trees. Pesticides protecting these trees from pests and diseases had a positive effect on general state of apple trees: their chlorophyll content was higher, water content increased somewhat; the oxidation reduction processes remained unaffected. Lowering of the pesticide concentration also decreased the cost of tree protection.

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USSR

~~BABIY~~ V. V., BLIZNYUK, N. K., DENISENKOVA, R. N., KOLOMIYETS, A. F.,
STREL'TSOV, R. V., FILIN-KOLDAKOV, B. V.

"Method of Fighting Undesirable Vegetation"

USSR Author's Certificate No 303038, filed 20/04/67, published 5/07/71.
(Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract
No 4N703P by T. A. Belyaeva).

Translation: In order to increase the herbicidal properties of α -(2, 4, 5-trichlorophenoxy)-propionic acid, it is suggested that it be used as its benzylester, which is more active than the other esters of this acid and has very low volatility.

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USSR

UDC 617.761-009.24-02:616.282.3

KURASHVILI, A. Ye., BABIYAK, V. I., VERICH, G. F., and PLATONOVA, T. G.,
Academy of Military Medicine imeni S. M. Kirov, Leningrad

"Parametric Description of Vestibular Nystagmus"

Moscow, Vestnik Otorinolaringologii, No 3, 1973, pp 31-35

Abstract: Based on a mathematical analysis of nystagmograms obtained from 50 subjects, the authors constructed empirical and theoretical curves showing the dynamics of the primary parameters of the nystagmic cycle. Using the methods of differential equations theory, they found the secondary parameters that determine the general patterns of nystagmus as a "stimulus -- reaction" process. Determination of the secondary parameters of vestibular nystagmus is of value in tracing the dynamics of the nystagmic reaction in relation to vestibular function and in diagnosing vestibular disorders. Nystagmus can also be modeled on a computer. By introducing perturbations into the secondary parameters, one can obtain nystagmic reactions with preassigned properties, i.e., artificially create pathological situations and subject them to structural analysis.

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USSR

UDC 612.886

KURASHVILI, A. Ye., Professor and BABIYAK, V. I., Candidate of Medical Sciences,
Chair of Otolaryngology, Military Medical Academy imeni S. M. Kirov

"Some Problems in the Physiology of the Vestibular Apparatus"

Moscow, Vestnik Otorinolaringologii, No 2, Mar/Apr 73, pp 3-10

Abstract: The complete vestibular apparatus is presented as a complex control system operating on active and passive feedback mechanisms and comprising a number of components -- inertial and gravitational sensors (cupula, endolymph, and otoliths), receptors and transformers (spatially polarized hair cells in cristae and maculae), central stations of information selection and distribution (the vestibular nucleus complex), mechanisms of direct and associated control (cerebellum, reticular formation, and thalamus), a system of specific and non-specific efferent functions (motor nuclei of extrinsic eye muscles, spinal cord, and hypothalamus), and the sensory (cortical) system with transmission to the subjective analyzer and the second signal system -- which are grouped into five subsystems: peripheral sensor, specific center, implementing organs, active control mechanisms, and the autonomic nervous system. Biomechanical aspects of the otolithic apparatus and of the semicircular canals are discussed, and the biophysical significance of the polarization of kinocilia is pointed out. According to the theory of frequency analysis, the semicircular canals are ideal sensors of the angular velocity of the rotation of the head.

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UDC 541.69+542.91+547.631.4

GAMBURYAN, A. A., BABIYAN, N. A., MOROZOVA, N. M., AKOPYAN, N. YE., CHAUSHYAN, K. M., and MNDZHOYAN, L. O., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences Armenian SSR, Yerevan

"Studies in the Field of Aminoethers. V. Dialkylaminoalkyl Ethers of Benzhydrol and o-, m-, and p-Benzhydrols - their Synthesis and Neuropharmacological Activity"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 10, 1971, pp 900-908

Abstract: By the rearrangement of quaternary salts formed by aminoalcohols with benzhydryl chlorides, the aminoethers $RC_6H_4-CH(Ph)-OC_nH_{2n}.NR'_2$ were prepared, where R = H or o-, m-, p-Me; R' = Me, Et; $C_nH_{2n} = (CH_2)_2, (CH_2)_3, (CH_2)_4, CH(Me)CH_2CH_2, CH(Me)CH(Me), CH_2C(Me)_2CH_2$. Physiological tests carried out with the aminoethers upon their conversion to hydrochlorides showed that transition from beta-dialkylaminoethyl ethers to propyl ethers increased the antispasmodic activity. This activity again decreased on transition to dialkylaminobutyl ethers. Some of the compounds that has been prepared exhibited an antihistaminic activity in tests on the isolated intestine of guinea pigs.

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USSR

GAMBURYAN, A. A., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 10, 1971, pp 900-908

The compounds synthesized together with their physical properties and the melting points of hydrochlorides or iodomethylates are listed in tables.

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USSR

UDC: 621.397:621.396.4

BABIYENKO, P. A.

"On the Problem of Nonlinearity of the Amplitude Characteristics of Video Channels of Main Communications Lines"

V sb. Vopr. Elektrosvyazi (Problems of Electrical Communications--collection of works), 1970, pp 58-62 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G156)

Translation: The author discusses problems of monitoring the nonlinearity of amplitude characteristics of video signals on main communications lines and of accounting for the effect which the form of these characteristics has on nonlinear distortions of TV signals. It is shown that nonuniformity in differential amplification of the video channels of main communications lines leads to a loss of quality in monochromatic and color TV. Grounds are given for the necessity of taking measures to correct the nonlinearity of amplitude characteristics of TV channels on main communications lines. Three illustrations, bibliography of five titles. Resumé.

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PRIMARY SOURCE: Vrachebnoye Delo, **1970**, Nr **2**, pp 8-12

SUMMARY

ELECTROGRAPHIC EXAMINATION OF THE GASTRIC
AND DUODENAL MOTOR FUNCTION

A. P. Babiuts (Vinnitsa)

Patients with diverticuli of the duodenum accompanied by motor disorders in the absence free and bound hydrochloric acid showed the hyperkynetic type of electrogastro- and electroduodenograms. In ulcerative diverticuli and multiple diverticulosis with decreased gastric acidity an hypokynetic type of the electrogram was registered.

It is concluded that depending on the complications of duodenal diverticuli one finds different disorders of the duodenal and gastric motor function and different electrographic characteristics.

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BABKIN, A. G., editor

Khimicheskaya tekhnologiya pererabotki redkometal'nogo syr'ya kol'skogo poluostrova (Chemical Technology for the Processing of Rare-Metal Raw Materials From the Kola Peninsula), Leningrad, "Nauka," 1972, 123 pp

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Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code:

UP 0020

95994a Effect of the supporting electrolyte on the formation of finely divided precipitates during the reduction of metals at a mercury electrode. Geinrikhs, K. Ya.; Babkin, G. N.; Kozlovskii, M. T.; Gladyshev, V. P. (Inst. Khim. Nauk, Alma-Ata, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(1), 135-7 [Phys Chem] (Russ). The effect of the supporting electrolyte on the electrode position of finely divided Cd onto a still Hg electrode was studied by measuring polarization (η) in ClO_4^- solns. of different concn. contg. $0.5N \text{ Cd}^{2+}$. At pH 6.5, the η values were independent of the nature of the anions (SO_4^{2-} , Cl^- , or ClO_4^-). In each case, at the limiting c.d., the finely divided Cd was formed; vibrating the electrode caused rapid dissoln. of the Cd into the Hg. Increasing the NaClO_4 concn. increased the η and decreased the limiting c.d. At concn. $> 0.5M \text{ NaClO}_4$, the voltage oscillated and Na amalgam was formed during these oscillations. At higher c.d.s., Cd was chem. pptd. by the amalgam to form the powd. Cd. The ability to form powd. Cd decreased from $\text{Li}^+ > \text{Na}^+ > \text{K}^+ > \text{Cs}^+$. The limiting c.d. for Cd redn. was not a function of pH. The reason for the finely divided deposits was not the passivating action of OH^- .

S. G. Meibuhr

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18

USSR

UDC 541.15+541.6+546

BABKIN, U. YU., and TSETLIN, B. L.

"Radiational Grafting Polymerization as a Method for Modification of Polymers and Inorganic Materials"

Moscow, Zhurnal Vsesoyusnogo Khimicheskogo Obshchestva imeni D. I. Mendeleev, Vol 18, No 3, 1973, pp 263-269

Abstract: The methods of synthesis and the areas of application of grafted systems have been analyzed in which homogeneity or interphase contacts are fixed by the chemical bonds between two types of polymer chains or between the polymer chains and the surface of mineral bodies. The question of the stability of such systems and the distribution of the grafted polymer in such systems is being discussed. Examples of practical utilization of radiational grafting polymerization have been described used in modifying textile fibers, fabrics and filtering materials with the overall goal of improving their utilization properties as mineral-organic fillers and pigments. It has been shown that this method has possibilities in producing oriented grafted systems, materials with novel compositions and ion exchange materials.

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USSR

UDC 51:621.391

BABKIN, V. F.

"Simple Method for Universal Coding of Source of Independent Messages"

4-y Simpozium Po Probl. Izbytochn. v Informatsion. Sistemkh. Dokl. Ch. 2. [4-th Symposium on Problems of Redundancy in Information Systems. Reports, Part 2 -- Collection of Works], Leningrad, 1970, pp 30-36 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V377 by S. Kislitsyn).

Translation: A binary sequence to be transmitted is divided into blocks of length n . Each such block is set in correspondence with a code pair of numbers (k, b_k) , where k is the number of ones in the block, while b_k ($0 < b_k < C_n^k - 1$) unambiguously characterizes the placement of the ones in the block. If the ones in the block are located at positions i_1, i_2, \dots, i_k , the sum $\sum_{l=1}^k C_{i_l-1}^{l-1}$ is taken as b_k .

This selection of b_k has a number of advantages over other methods.

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Refractory Materials

USSR

UDC: 666.764.13:66.063.5

KASHCHEYEV, I. D., ~~BARKIN, V. G.~~, MAMYKIN, P. S. and TSAREVSKIY, B. V.,
Ural Polytechnic Institute imeni S. M. Kirov

"Kinetic Characteristics of Wetting and Impregnation of Magnesium Oxide
With Fayalite"

Moscow, Ogneupory, No 4, Apr 72, pp 45-48

Abstract: A study has been made of the effect of saturating electrically molten magnesium oxide with a soluble salt of chromium acetate (7.50 g per 1 liter H_2O) on the capillary impregnation rate and spreading of fayalite over the surface of MgO under isothermal conditions. With increasing temperature, the impregnation rate increases. In specimens treated with a chromium acetate solution the impregnation rate drops to one half of the initial rate. Applying a chromium salt film to electrically molten MgO plates reduces the initial spreading rate from 400 and 700 deg/sec to 95 and 180 deg/sec at 1250 and 1300°C, respectively. To determine the impregnation rate, use was made of a method in which the movement front of the impregnating liquid is continuously fixed by variations in the resistivity of the specimen. The wetting rate was evaluated by changes in the angle of flow of the drop in time. (4 illustrations, 12 bibliographic references)

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USSR

UDC 534-14

BABKIN, V.P., FADEYEVA, L.M.

"Model Experiments On Attestation Of Spherical Targets"

Tr.Akust.in-ta (Works Of The Institute Of Acoustics), 1971, Issue 17, pp 80-98
(from RZh--Elektronika i yeye primeneniye, No 3, 1972, Abstract No 3A360)

Translation: An experimental study is made in a hydroacoustic basin of returns dispersed by various screens during their irradiation by audio pulses of ultrasonic frequency. The results are presented of experiments on measurement of the frequency response of the scattering amplitude by spherical targets with a 25-mm radius, made from steel, Dural, brass, ebonite, organic glass, and lead. It is shown that the average interval between neighboring maxima is monotonically connected with the velocities of the shear waves originating in the material of the target by the action of an incident wave. The frequency spectra are given of the back scattering of the UE (ultrasonic echoes) by pairs of targets located at various azimuthal angles to the direction of the incident wave. 12 fig. 3 tab. 14 ref. L.K.

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USSR

UDC 536.46:533.6

BABKIN, V. S., V'YUN, A. V.

"The Upper Limit of Flame Propagation Under Pressure in a Limited Space"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 289-292 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B970)

Translation: It is shown that free convection plays a considerable role on flame propagation limits. The flame propagates over the entire volume under ignition of the mixture at the center of a spherical vessel in the limit as a result of convection and heat losses to the walls. A similar phenomenon, partial propagation of the flame (the upper limit with respect to pressure in a limited space), is observed upon a change in pressure if the convection rate is commensurable with the visible flame velocity. A consequence of this phenomenon is the inadequacy of the results in terms of combustion in tubes of various diameters. The conclusions of this study emphasize the necessity for selecting a criterion for the explosive hazards of mixtures. Authors' abstract.

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UDC: 621.317.335

BABKIN, V. V., SHAMRAY, B. V.

"An Adaptive Method for Automatic Measurement of the Temperature Coefficient of Capacitance"

Elektron. tekhnika. Nauchno-tekhn. sb. tekhnol. i organiz. proiz-va (Electronic Technology. Scientific and Technical Collection. Technology and Organization of Production), 1970, vyp. 3(35), pp 44-49 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A374)

Translation: The authors substantiate the feasibility of using a frequency-time method of measuring the temperature coefficient of capacitance of capacitors under conditions of adaptation to the initial capacitance. A circuit is described which can be used to measure the temperature coefficient of capacitance of capacitors with high precision over a range of 1-10,000 pF. Resumé.

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UDC: 621.373.531

BABKIN, V. V., SHAMRAY, B. V.

"An Oscillator Which Produces a Series of Square Pulses"

Izv. Leningr. elektrotekh. in-ta (News of the Leningrad Electrical Engineering Institute), 1969, vyp. 81, pp 210-211 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G273)

Translation: The paper describes an oscillator which produces a series of square pulses with given prf, amplitude, and length of the series. The pulse length is equal to the duration of a pause. All these parameters are given by corresponding codes. N. S.

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B UDC: 621.396.69:621.316.8

BABKIN, V. V., SHAMRAY, B. V.

"Standardization of Automatic Devices for Inspection of Radio Components"

Tr. Sev.-Zap. zaochn. politekhn. in-t (Works of the Northwest Polytechnical Correspondence Institute), 1969, No 4, pp 93-97 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7V337)

Translation: The authors evaluate the possibility of standardizing automatic devices for inspection of radio components (resistors, capacitors and inductors) built into the automatic line for production of these components. The most complex operation is that of checking the temperature coefficient of stability. Ye. M.

1/1

USSR

UDC 681.327.11

ANTONOVA, T. N., BABKIN, V. YA., IOFFE, M. G., KOSHEVOY, L. L., SHLYAKHTER, D. M.

"A Device for Recording Information"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrantsy, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 276514, Filed 18 Mar 69, p 137

Abstract: This author's certificate introduces a device for recording information and contains memory units, distributors, a master oscillator, an electronic clock, a control module, a printout and logic circuits. As a distinguishing feature of the patent, speed is increased and reliability is improved by introducing an inhibitor connected between the master oscillator and the distributor counter. One of the inputs of this counter is connected to the outputs of the flip-flops in the cells of the memory units, while its other input is connected through an OR gate to the outputs of the coincidence circuits of these cells. Also incorporated in the device is a printout control module which contains a coincidence whose inputs are connected to the outputs of the coincidence circuits in the memory units and to one of the inputs of the coincidence circuits of the control module. A flip-flop is also added with its input connected to the output of the coincidence circuit

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USSR

ANTONOVA, T. N., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 276514, Filed 18 Mar 69, p 137

and its output connected to one of the inputs of the other coincidence circuits in the control module, which are connected through OR circuits to the output amplifiers.

2/2

USSR

UDC 616.981.452-084.47

AGAFONOV, V. I., BABKIN, Ye. I., VDOVIN, D. G., VOROBEYCHIKOV, V. M.,
VOROB'YEV, A. A., GABLESHKO, Kh. P., GAPCCHKO, K. G., GEFEN, N. Ye., YEVSTIGHNEEV,
V. I., YEMEL'YANOVA, O. V., ZEMSKOV, Ye. M., IMAMALIYEV, O. G., KAPALOV, I. I.,
KVIRIKADZE, V. V., KUTYREV, P. A., MISHNIKOV, O. P., PUSHKAREV, V. P., and
ROZDESTVENSKIY, D. A., Military Medical Academy imeni S. M. Kirov, Leningrad

"A Comparative Efficiency Characteristic of Different Immunization Methods
Against Plague Infection"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972,
pp 106-112

Abstract: Analysis of the available literature data led to the conclusion
that oral, aerogenic, and jet immunization methods are the most efficient
compared with subcutaneous and skin methods. The average number of patients
inoculated against plague infection was 517, 817 (419), and 937 per hr for jet
injectors, aerogenic method liquid and dry vaccine, and oral method (tablets),
respectively, compared with only 43 and 28 for the subcutaneous and skin
methods, respectively.

1/1

Titanium

B

UDC: 621.76...

POZEMAL'D, T. L., BARKIN, Ya. A., and ALKSEYeva, Ye. I.

"Etching High-Strength Titanium Alloys Without Hydrogenation"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 76, pp 410-415

Abstract: A review of earlier research shows that etching of titanium alloys extensively used in electrolytes comprising various combinations of hydrofluoric, sulfuric, hydrochloric, and nitric acids and salts containing fluorine ions is attended by the undesirable effect of hydrogenation. This study concerns the kinetics of the cathodic process in electrolytes containing HNO_3 and HF and the determination of etching potential regions which will eliminate hydrogen depolarization and, consequently, hydrogenation, and will also insure an adequate etching rate. The constructed ternary diagrams for the systems HNO_3 -HF- H_2O reflect the etching rate, stationary potentials, and the hydrogenation of the VT-15 alloy as functions of the component ratio. A correlation of the results of two independent methods shows that the data of electrochemical studies may serve as a valid basis for selecting electrolytes for etching titanium alloys without hydrogenation. An electrolyte composition (30-42 wt.% HNO_3 +9-16 wt.% HF) providing an adequate etching rate of the VT-15 alloy, good surface quality, and freedom from hydrogenation has been determined. Etching VT-14, VT-19, and VT-16 high-strength titanium alloys in an electrolyte containing 10-15 wt.% HNO_3 and 4-6 wt.% HF at room temperature involves no hydrogenation.

USSR

UDC: 621.391.2

BABKIN, Yu. S., ISKHAKOV, I. A., SOKOLOV, A. V., STROGANOV, L. I., SUKHONIN, Ye. V.

"On the Problem of Attenuation of Emission on a 0.96 mm Wave in Snow"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 12, Dec 70, pp 2459-2462

Abstract: This work was done to study attenuation on a 0.96 mm wave on a 680 m transmission path in snows of up to 2 mm/hr expressed in the amounts of water precipitated. The experimental part of the work was done in 1969-1970 in the central European section of the Soviet Union. Precipitation was measured by three P-2 recording rain gauges placed at both ends of the transmission path and in the middle. Temperature, pressure, humidity and wind speed were measured at the same time. Rotating one-meter Cassegrain antennas were used. It was found that attenuation in rains of the same intensity (2 mm/hr) is approximately 30-40% lower. A strongly idealized calculation is given within the framework of Mie theory for attenuation in snows. The results agree satisfactorily with experimental data if the effective radii of spherical snow particles are interpolated. The authors thank M. A. Kolosov for advice and for remarks made during the work.

1/1

USSR

UDC: 621.391.2:621.396.96

BABKIN, Yu. S., ZIMIN, N. N., IZYUMOV, A. O., ISKHAKOV, I. A., SOKOLOV, A. V.,
STROGANOV, L. I., SUKHONIN, Ye. V., SHABALIN, G. Ye.

"Measurement of Rain Attenuation on a 0.96 mm Wave Over a 1 km Route"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 12, Dec 70, pp 2451-2453

Abstract: An investigation is made into attenuation in rains of varying intensity and a relationship is found between the attenuation and the mass of water precipitated in a given time interval. The transmitter was a frequency-stabilized unit based on a backward-wave oscillator, and the receiver used an indium antimonide detector cooled to liquid helium temperatures. Rotating one-meter Cassegrain antennas were used. Rainfall was registered by three P-2 recording rain gauges placed at both ends and in the middle of the 1 km transmission path. Temperature, pressure, humidity and wind speed were also measured. Attenuation on a 0.96 mm wave was determined from the change in signal level at the receiver during rains. For rain intensity of 0.12 mm/hr (covering more than 99% of all cases) the attenuation on a 0.96 mm wave in decibels per kilometer is approximately $1.53 \cdot I^{0.038}$, where I is rain intensity in mm/hr. This is 2.5-3 times the attenuation observed on a wave of 8.6 mm.

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USSR

UDC 547.26'118

ZAVLIN, P. M. D'YAKONOV, A. N., AL'BITSKAYA, V. M., and BABKINA, E. I.,
Leningrad Institute of Cinematographic Engineers

"Reaction of Dithioesters of Cyclohexylphosphonous and Thiophosphonic
Acids With Decyl Alcohol"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, p 2788

Abstract: Heating S-phenyl-SObenzylcyclohexyldithiophosphonite or its
trithio homolog with decyl alcohol at 210° for 6 hrs yields the respective
thiophenol and O-decyl-S-benzylcyclohexylthiophosphonite. When S-heptyl-
S-benzylcyclohexyldithio(trithio)phosphonite is heated with decyl alcohol,
the products are heptylmercaptan and O-decyl-S-benzylcyclohexylthiophos-
phonite.

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USSR

UDC 547.241

LEVIN, Ya. A., GILYAZOV, M. M., and BARKINA, E. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Kazan' Branch of the Academy of Sciences USSR, and the Branch of the Scientific Physical Chemical Research Institute imeni L. Ya. Karpov

"Cyclohexyl- β -chloroethylphosphinic Acid and Its Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, p 2786

Abstract: Reaction of cyclohexyldichlorophosphine with ethylene oxide in ether at 0° gives a quantitative yield of di- β -chloroethylcyclohexylphosphonite, n_D^{20} 1.5055, d_4^{20} 1.2280, which rearranges after heating to the β -chloroethylester of cyclohexyl- β -chloroethylphosphinic acid, b.p. 138-140/0.02 mm, n_D^{20} 1.5090, d_4^{20} 1.2400. The latter treated with PCl_5 yields cyclohexyl- β -chloroethylchlorophosphinate, b.p. 109-110°/0.03 mm, n_D^{20} 1.5175, d_4^{20} 1.2500 which can be hydrolyzed to cyclohexyl- β -chloroethylphosphinic acid, m.p. 50-52°.

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UDC 547.51 +541.15 + 661.718.1

USSR

BABKINA, E. I., VINOGRADSKAYA, L. S., DOBROVA, Ye. I., and GUR'YEVA, N. A.,
Branch of the Physical Chemical Scientific Research Institute imeni L. Ya.
Karpov

"Radiochemical Synthesis of Organophosphorus Compounds Based on Indene and
Phosphorus Trichloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 2084-2085

Abstract: Gamma irradiation of the mixtures of indene and PCl_3 under conditions favoring either addition of PCl_3 to the double bond or polymerization as well as under conditions practically excluding the possibility of polymerization yields, fails to induce the addition of PCl_3 to the indene along the double bond. This may be due to an extremely unsaturated state of the indene double bond leading principally to the polymerization products.

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USSR

UDC 547.241

GRAPOV, A. F., KOZLOV, V. A., BABKINA, E. I., and MEL'NIKOV, N. N., All Union Scientific Research Institute of Chemical Plant Protective Agents, and the Branch of the Scientific Physical-Chemical Research Institute imeni L. Ya. Karpov

"Chlorocyclohexylthiophosphonic Acid and Cyclohexenylthiophosphonic Acid Chlorides and Amides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1919-1921

Abstract: Heating phosphorus trichloride with chlorocyclohexyldichlorophosphine at 125° for 3 hrs yields 2-chlorocyclohexylthiophosphonic acid dichloride, which reacted with triethylamine in benzene solution converts to cyclohexen-1-ylthiophosphonic acid dichloride. α -Chlorocyclohexyldichlorophosphine reacted with triethylamine yields cyclohexen-1-yldichlorophosphine which can be converted to a derivative of tetracoordinated phosphorus by an exchange reaction with phosphorusthiotrichloride.

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USSR

UDC 547.26'118

ZAVLIN, P. M., D'YAKONOV, A. N., AL'BITSKAYA, V. M., and BABKINA, E. I.,
Leningrad Institute of Cinematographic Engineers

"Reaction of Nonsymmetric Diesters of Phosphonous Acids With Nucleophilic
Reagents"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, p 1651

Abstract: Reactions of nonsymmetric diesters of cyclohexylphosphonous acid with decyl alcohol were studied. In the process of equilibrium transesterification, this equilibrium is shifted in the direction of the low-boiling product. In contrast to the derivatives of phosphonic acids, the phosphonous acids show apparently no effect of the vacant 3d orbitals of tricoordinated phosphorus atom on the direction of transesterification processes.

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USSR

UDC: 547.51+541.15+661.718.3

BARKINA E. I., VERESHCHINSKIY, I. V., Scientific Research Institute of
Physical Chemistry imeni L. Ya. Karpov

"Radiochemical Synthesis of Organophosphorus Compounds. III. Effect of Small
Amounts of Additives on the Yield of Products of the Reaction of Olefins With
Phosphorus Trichloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1285-1288

Abstract: An investigation was made of the effect of various additives on the
reaction of cyclohexene with phosphorus trichloride. It was found that
addition of benzene, carbon tetrachloride and water double the yield of the
final product -- β -chlorocyclohexyl dichlorophosphine -- at 20°C, and increase
the yield by one-fourth at 100°C. Addition of $\text{Fe}_2(\text{SO}_4)_3 \cdot 9\text{H}_2\text{O}$ reduces the
yield by 70-80%, while the addition of $\text{CuCl} \cdot \text{Cu}(\text{OH})_2$ and $\text{CuCl}_2 \cdot \text{Cu}(\text{OH})_2$ com-
pletely suppresses the process of addition of PCl_3 to cyclohexene.

1/1

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Molecular Biology

USSR

UDC 547.963.3

BABKINA, G. T., KNORRE, D. G., and MALYGIN, E. G., Institute of Organic Chemistry, Siberian Department of the Academy of Sciences USSR

"Effect of Cobra Venum RNase on tRNA Modified by Water-Soluble Carbodiimide"

Moscow, Molekulyarnaya Biologiya, No 1, 1971, pp 126-131

Abstract: tRNA modified by the po-toluenesulfonate of N-cyclohexyl-N'-[β -(4-methyl-morpholinium)ethyl]carbodiimide does not interfere with the action of cobra (*Naja oxiana*) venom RNase on the phosphodiester bonds adjacent to the modified uridine residues. Of the four possible types of bonds differing from one another in their orientation to the modified nucleotide residue and in the nature of the latter, only the bonds adjacent to quanosine ribose are relatively resistant to hydrolysis. The calculations based on experimental data concerning the relationship between the degree of hydrolysis of tRNA by cobra RNase and the degree of modification of bases were found to be consistent with a model of enzymatic activity previously proposed by the authors in which the enzyme-substrate complex of RNase and polyribonucleotides is formed when the molecule of the enzyme comes into contact with the trinucleotide chain of the substrate.

1/1

1/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--WATER DILUTED RESINS FOR ELECTRODEPOSITION -U-
AUTHOR--BABKINA, M.M. B
COUNTRY OF INFO--USSR
SOURCE--LAKOKRASOCH. MATER. IKH. PRIMEN. 1970, (1), 78-82
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--WATER, AQUEOUS SOLUTION, METAL COATING, ELECTRODEPOSITION,
RESIN

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/0545 STEP NO--UR/0303/70/000/001/0079/0082
CIRC ACCESSION NO--AP0107150
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107150

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE USE OF AQ. SOLNS. OF POLYMER.
RESINS FOR ELECTRODEPOSITION ON METALS IS REVIEWED WITH 82 REFS.

0123

UNCLASSIFIED

BABKINA, O. I.

physiology

EFFECT OF DIFFERENT ATMOSPHERES ON ACTIVE TRANSPORT OF GLUCOSE IN THE SMALL
INTESTINE OF RATS

Article by ^{Ac} O. I. Babkina and ^{Ac} K. V. Salimov, Moscow, Kozlovskaya Biologiya
i Meditsina, ^{Ac} ~~Moscow~~, No 3, 1971, submitted for publication 18 Sep-
tember 1970, pp 22-26

SO:JPRS 54768
22 DEC 71

UNC 612.332.76-06:612.223

Abstract: Experiments conducted with segments of the small intestine in rats gave evidence that a preliminary exposure of the animals to a modified atmosphere (hypoxia -- ascent to an altitude of 12,000 m; hypercapnia -- 20% CO₂; hypervoxia -- 100% O₂ at a pressure of 4 atm) accelerated the active transport of glucose. Exposure to a hypoxic atmosphere induced the greatest changes.

The investigation of body functions with a change in the surrounding atmosphere is of great importance for space biology and medicine in relation to the problem of forming an artificial atmosphere in spacecraft cabins. This makes it possible to devise a number of prophylactic measures for preventing the development of pathological states in cosmonauts (Gooden).

The digestive system is readily damaged when the body is exposed to extremal factors (I. P. Kozlov; van Liere; Barron and Cook).

The principal and final stage in the complex activity of digestive organs is the suction of matter in the digestive tract. The weakening or impairment of resorptive activity is reflected in other body functions, this leading to profound changes in trophic processes in the gastrointestinal tract. In the process of suction of food substances in the gastrointestinal tract a definite role is played by such physical factors as diffusion, osmosis, and filtration, which in the living body conform to complex biological laws. It has been shown in numerous investigations that among the large number of factors favoring the suction of carbohydrates, amino acids and fats, it is the diffusion and active transport processes which are of the greatest importance (A. V. Rikhl; R. O. Fyvelberg; O. A. Shihova-Krasovskaya; A. M. Ugolev; Vezar and McDougall; Wilson; Wiseman; Crum, Forster, et al.; Helms; Curtin; Stein). The energy expended on

Physiology

USSR

UDC: 612.386-06:612.273.37-087.45

SMIRNOV, K. V., and BAEKINA, O. I.

"Shift in the Rate of Absorption and Incorporation of C^{14} -Labeled Glucose in Organs and Tissues During Exposure to Hypoxia"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 12, Dec 70, pp 29-31

Abstract: Rats were exposed to acute hypoxia for 15 to 20 min and then injected with 2 ml of C^{14} -labelled glucose with an activity of 25 microcuries. Up to 3 hours later, the glucose concentration in the gastric contents was appreciably higher than in controls. The temporary inhibition of evacuation of glucose from the stomach was ascribed to vagopyloric spasm. C^{14} activity in the liver, brain, stomach, and intestinal walls was higher in experimental animals than in controls, while the specific radioactivity of the lungs, kidneys, spleen, and muscles was the same as in controls. Exposure to hypoxia slowed the excretion of the isotope in the urine but increased its excretion in the feces.

1/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ELECTRODIALYSIS STUDY OF ANIONIC POLYMERIZATION CATALYSTS -U-

AUTHOR-(02)-BABKINA, O.N., DYACHKOVSKIY, F.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 301-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRODIALYSIS, POLYMERIZATION CATALYST, STYRENE,
ORGANOLITHIUM COMPOUND, GUANIDINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1238

STEP NO--UR/0460/70/012/004/0301/0303

CIRC. ACCESSION NO--AP0134912

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134912

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEVERAL ANIONIC CATALYSTS, E.G.,
ETI. C SUB10 H SUB8 LI, AND LIVING POLYSTYRENE (RLI PLUS C SUB8 H
SUB8) WERE STUDIED BY ELECTRODIALYSIS IN A 3 COMPARTMENT DIALYZER AT
20DEGREES UNDER AR. MAX. POLYSTYRENE (I) YIELDS WERE OBTAINED IN THE
PRESENCE OF LI PRIME POSITIVE; OTHER IONS SUCH AS NH SUB4 PRIME
POSITIVE, NR SUB4 PRIME POSITIVE, AND CN SUB3 H SUB6 PRIME POSITIVE
{GUANIDINIUM} WERE LESS EFFECTIVE. THE YIELD OF I WAS PROPORTIONAL TO
THE QUANTITY OF ELECTRICITY PASSING THROUGH THE SOLN. AND MONOMER CONCN.
ANIONIC POLYMN. OF PHCH:CH SUB2 MAY OCCUR WITHOUT METALLIC ANTIIONS.
FACILITY: FILIAL INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

USSR

UDC 666.112.92:546.18

SHCHAVELEV, O. S., Candidate of Sciences, BABKINA, V. A.

"Investigation of the Thermo-optical Constant W of Phosphate Glasses as a Function of Their Chemical Composition"

Leningrad, Optiko-mekhanicheskaya Promyshlennost', No 9, Sep 70, pp 43-46

Abstract: An experimental study is made of the effect which various components have on the thermo-optical constant W of five types of phosphate glass. A total of 28 different components were added in the five series of experiments. It is found that grades of glass with low thermo-optical constant and a variety of optical properties can be produced by combining phosphorus anhydride with components having positive and negative thermo-optical constants. Thus the results of these tests definitely show that a phosphate base is extremely promising for synthesis of glass with a low thermo-optical constant. The results of these experiments should be considered preliminary. A more thorough study must be made into the thermo-optical properties of specific 1/1 types of phosphate glass in this category.

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USSR

UDC 666.112.92:546.18

SHCHAVELEV, O. S., BABKINA, V. A., and DIDENKO, L. A.

"Optical Glass"

USSR Author's Certificate No 366159, Filed 29 Sep 71, Published 16 Jan 73
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7,
Mar (a) 73, Claim No 1701960/29-33)

Translation: An optical glass including P_2O_5 , BaO, PbO; La_2O_3 , Al_2O_3 , B_2O_3 ,
 K_2O ; Nb_2O_5 ; and CeO_2 is distinguished by the fact that in order to guarantee a
small thermo-optical constant with a characteristic refraction of 1.1611 and a
mean dispersion of 0.01095, it contains the above components in the following
quantities, weight %: P_2O_5 42-45, BaO 36.5-39.5, PbO 8.5-10.5, La_2O_3 2-3,
 Al_2O_3 1-2, B_2O_3 1-2, K_2O 2-3, Nb_2O_5 0.1-1, CeO_2 0.1-1.

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USSR

UDC: 8.74

BARKO, L. D., YEVLADENKO, V. N.

"Automated System for Syntactical Testing of Responses of 'Recognizer' Students"

Mat. i Inform. Probl. Prognoz. i Upr. Naukoy [Mathematics and Information Problems in Prediction and Control of Science--Collection of Works], Kiev, 1971, pp 165-172 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V556, by V. Utkin)

Translation: The component parts of the "recognizer" system are defined: a recoder, models of automatic systems for syntactical checking of answers, including a model of an alpha-recognizer of syntactical correctness of students' answers, and an error locator. The system runs on the VESM-6 computer, occupies approximately 1000 words of memory and checks an average of 8000 symbols per second. A grammatical system describing one version of ALGOL-60 is presently connected to it.

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UDC 8.74

USSR

BABKO, I. D.

"Some Problems of Error Location in Sentences of Formal Languages"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 346-356 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V464)

Translation: Methods are proposed for monitoring the sentences of formal languages permitting detection of syntactic errors in the controlled sentence. The idea of the methods consists in more precise definition of the error concept. The basis for the error concept is the concept of an inadmissible sequence satisfying a simple structural condition. The properties of the proposed methods are presented. It is demonstrated that one of the proposed methods can detect all of the errors in sentences before introducing any changes in the sentences. It is also demonstrated that the monitoring techniques are partial error location techniques and therefore these methods cannot always detect all the errors before introducing corrections into the controlled sentence. It is noted that the discussed methods can be used for syntactic monitoring of programs and the control of trainee responses. In the case of syntactic control the formal language errors are interpreted as syntactic errors. In the case of

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USSR

BABKO, L. D., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 346-356

monitoring the answers of trainees, the controlled sentence is interpreted as the answer of the trainee and the formal language, as the set of all correct answers to the given question. The error in the formal language is interpreted as the error in the trainee response.

2/2

- 73 -

UDC 51.801

USSR

BABKO, L. D., STAROVOYTOV, L. N.

"An Algorithm for Syntactic Monitoring of the Responses of Trainees"

V sb. Mat. i inform. probl. prognozir. i upr. naukoy (Mathematical and Information Problems of Forecasting and Control of Science -- collection of works), Kiev, 1971, pp 173-183 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V702)

Translation: In this paper an algorithm is proposed for monitoring whether α belongs to a language generated by G by the given pair (α, G) where α is a sentence (the monitored response) and G is a grammar. The region of application of the algorithm includes the set of all context-free languages of practical importance.

The version of the algorithm executed on the BESM-6 computer permits a set of pairs (α_i, G_i) with a total sentence length of 3,000 to 5,000 symbols to be monitored in one second.

1/1

USSR

UDC 621.313.322.013.8.001.24

BABKO, L. V., YURGANOV, A. A., YUREVICH, YE. I.

"Optimal Emergency Control of the Generating Units of Power Systems"

V sb. Vozbuzhdeniye, regulir. i ustoychivost' sinkhron. mashin (Excitation, Regulation and Stability of Synchronous Machines -- collection of works), Leningrad, Nauka Press, 1970, pp 42-50 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye207)

Translation: A study is made of optimal nonlinear control of the excitation of a turbogenerator as applied to the standard power system. The equations describing the motion of the object are reduced to a form which is convenient for application of the principle of the maximum. The combined criterion of optimality insuring maximum limits of dynamic stability is investigated, and a procedure is described for determining the control corresponding to this criterion. The study was performed on an analog computer, and the results were checked on an electrodynamic model. There are 3 illustrations and a 4-entry bibliography.

1/1

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USSR

UDC 669.15.018.8

BABKOV, A. A., and CHERKASHINA, N. P.

"Effect of Hot Plastic Deformation on Structure and Mechanical Properties of Kh21N5T Steel"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 108-112 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I586 by authors)

Translation: The authors studied the mechanical properties of as-cast and as-deformed Kh21N5T steel (14.7-ton ingot, slab, and thin sheet), and made a chemical analysis of alpha and gamma phases on a microanalyzer of the CA-MECA Company during ingot conversion to sheet. No dendritic segregation of chemical elements is observed in the metal of ingot, slabs, or sheet. One illustration. Two tables. Bibliography with four titles.

1/1

- 11 -

USSR

UDC 539.194

BABKOV, L. M. KOVNER, M. A., MEL'NIK, V. I., PUCHKOVSKAYA, G. A., KHARCHENKO, N. P.,
and SHPAK, N. T.

"Vibration, Luminescence, and Absorption Spectra of Benzophenone and Their Interpretation"

Leningrad, Optika i Spektroskopiya, Vol 35, No 1, Jul 73, pp 58 - 64

Abstract: Benzophenone has a number of properties that are presently of interest: significant piezoelectric effect, 100% conversion from the excited singlet level to the triplet state, high photochemical activity in hydrogen-containing solvents, and effective transfer of excitation energy. The majority of these effects are due to the characteristics of the electron structure of the benzophenone molecule.

In this study, infra-red spectra and luminescence and absorption spectra of benzophenone are obtained and their oscillatory structure is resolved. The problem of normal molecular oscillations of benzophenone in the ground electron state is solved. On the basis of a calculation of the frequencies and shapes of oscillations the frequencies are related to types of symmetry of the C_2 group and to oscillations of bonds and angles. The changes in the oscillatory frequencies with excitation to the singlet and triplet electron states are determined and an interpretation of the vibron transitions is suggested.

1/1

USSR

UDC: 8.74

BABKOV, V. V.

"Model of Genetic Evolution of Populations With Spatial Isolation (in a Computer Experiment)"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 77-80 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V594)

Translation: The paper proposes a realization of a planar model of a population with strict spatial isolation in a computer experiment. The results are discussed. Author's abstract.

1/1

- 69 -

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--A PLANE CONTACT PROBLEM OF THE THEORY OF ELASTICITY FOR A CIRCULAR
RING -U-
AUTHOR--(02)-BABLOYAN, A.A., SAAKIAN, V.G.
COUNTRY OF INFO--USSR
SOURCE--AKADEMIIA NAUK ARMJANSKOI SSR, IZVESTIIA, MEKHANIKA, VOL. 23, NO.
1, 1970, P. 3-17
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PHYSICS
TOPIC TAGS--ELASTICITY THEORY, METAL RING, BIBLIOGRAPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1491 STEP NO--UR/0430/70/023/001/0003/0017
CIRC ACCESSION NO--AP0120278
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120278

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLUTION OF THE PLANE STRAIN PROBLEM FOR A CIRCULAR RING WHOSE INNER AND OUTER BOUNDARIES ARE LOADED BY MORE THAN ONE IDENTICAL SYMMETRICALLY POSITIONED RIGID PUNCHES WITH EQUAL DIMENSIONS ON EACH OF THE BOUNDARIES. ATTENTION IS GIVEN TO CASES WHERE THE INTERNAL AND EXTERNAL PUNCHES ARE OPPOSITE EACH OTHER AND WHERE THEY ARE STAGGERED. THE PROBLEM IS REDUCED TO THE SOLUTION OF A DUAL TRIGONOMETRIC SERIES SYSTEM WHICH IN TURN IS REDUCED TO TWO INFINITE SYSTEMS OF LINEAR ALGEBRAIC EQUATIONS. CONVENIENT FORMULAS ARE GIVEN FOR CALCULATING THE CONTACT STRESSES AND RADIAL DISPLACEMENTS.

FACILITY: AKADEMIYA NAUK ARMIAANSKOI SSR, INSTITUT MATEMATIKI I MEKANIKI, YEREVAN, ARMENIAN SSR.

UNCLASSIFIED

1/2 009

TITLE--GELATIN AND GLUE -U- UNCLASSIFIED

PROCESSING DATE--1600170

AUTHOR--(021)-BABLOYAN, D.O., YAZYKOV, V.K.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,576

REFERENCE--OTKRYITIYA, IZOBRETI., PROM, OBRAZTSY, TOVARNYE ZNAKI 1970.

DATE PUBLISHED--03MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GLUE, GEL, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REF/FRAME--1995/1086

CIRC ACCESSION NO--AA0116552

SIEP NO--00/0402770/000/000/0000/0000

UNCLASSIFIED

USSR

UDC 621.313.322.013.8.001.24

BABKO, I. V., YURGANOV, A. A., YUREVICH, YE. I.

"Optimal Emergency Control of the Generating Units of Power Systems"

V sb. Vozbuzhdeniye, regulir. i ustoychivost' sinkhron. mashin (Excitation, Regulation and Stability of Synchronous Machines -- collection of works), Leningrad, Nauka Press, 1970, pp 42-50 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye207)

Translation: A study is made of optimal nonlinear control of the excitation of a turbogenerator as applied to the standard power system. The equations describing the motion of the object are reduced to a form which is convenient for application of the principle of the maximum. The combined criterion of optimality insuring maximum limits of dynamic stability is investigated, and a procedure is described for determining the control corresponding to this criterion. The study was performed on an analog computer, and the results were checked on an electrodynamic model. There are 3 illustrations and a 4-entry bibliography.

1/1

- 113 -

USSR

UDC 669.15.018.8

BABKOV, A. A., and CHERKASHINA, N. P.

"Effect of Hot Plastic Deformation on Structure and Mechanical Properties of Kh21N5T Steel"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 108-112 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I586 by authors)

Translation: The authors studied the mechanical properties of as-cast and as-deformed Kh21N5T steel (14.7-ton ingot, slab, and thin sheet), and made a chemical analysis of alpha and gamma phases on a microanalyzer of the CAMECA Company during ingot conversion to sheet. No dendritic segregation of chemical elements is observed in the metal of ingot, slabs, or sheet. One illustration. Two tables. Bibliography with four titles.

1/1

- 11 -

USSR

UDC 539.194

BABKOV, L. M. KOVNER, M. A., MEL'NIK, V. I., PUCHKOVSKAYA, G. A., KHARCHENKO, N. P.,
and SHPAK, N. T.

"Vibration, Luminescence, and Absorption Spectra of Benzophenone and Their Interpretation"

Leningrad, Optika i Spektroskopiya, Vol 35, No 1, Jul 73, pp 58 - 64

Abstract: Benzophenone has a number of properties that are presently of interest: significant piezoelectric effect, 100% conversion from the excited singlet level to the triplet state, high photochemical activity in hydrogen-containing solvents, and effective transfer of excitation energy. The majority of these effects are due to the characteristics of the electron structure of the benzophenone molecule.

In this study, infra-red spectra and luminescence and absorption spectra of benzophenone are obtained and their oscillatory structure is resolved. The problem of normal molecular oscillations of benzophenone in the ground electron state is solved. On the basis of a calculation of the frequencies and shapes of oscillations the frequencies are related to types of symmetry of the C_2 group and to oscillations of bonds and angles. The changes in the oscillatory frequencies with excitation to the singlet and triplet electron states are determined and an interpretation of the vibron transitions is suggested.

1/1

USSR

UDC: 8.74

BARKOV, V. V.

"Model of Genetic Evolution of Populations With Spatial Isolation (in a Computer Experiment)"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 77-80 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V594)

Translation: The paper proposes a realization of a planar model of a population with strict spatial isolation in a computer experiment. The results are discussed. Author's abstract.

1/1

- 69 -

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--A PLANE CONTACT PROBLEM OF THE THEORY OF ELASTICITY FOR A CIRCULAR
RING -U-
AUTHOR-(02)-BABLOYAN, A.A., SAKIAN, V.G.
COUNTRY OF INFO--USSR **B**
SOURCE--AKADEMIIA NAUK ARMIAANSKOI SSR, IZVESTIIA, MEKHANIKA, VOL. 23, NO.
1, 1970, P. 3-17
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PHYSICS
TOPIC TAGS--ELASTICITY THEORY, METAL RING, BIBLIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1491 STEP NO--UR/0430/70/023/001/0003/0017
CIRC ACCESSION NO--AP0120278
UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

212 020

CIRC ACCESSION NO--AP0120278
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT, SOLUTION OF THE PLANE STRAIN
PROBLEM FOR A CIRCULAR RING WHOSE INNER AND OUTER BOUNDARIES ARE LOADED
BY MORE THAN ONE IDENTICAL SYMMETRICALLY POSITIONED RIGID PUNCHES WITH
EQUAL DIMENSIONS ON EACH OF THE BOUNDARIES. ATTENTION IS GIVEN TO CASES
WHERE THE INTERNAL AND EXTERNAL PUNCHES ARE OPPOSITE EACH OTHER AND
WHERE THEY ARE STAGGERED. THE PROBLEM IS REDUCED TO THE SOLUTION OF A
DUAL TRIGONOMETRIC SERIES SYSTEM WHICH IN TURN IS REDUCED TO TWO
INFINITE SYSTEMS OF LINEAR ALGEBRAIC EQUATIONS. CONVENIENT FORMULAS ARE
GIVEN FOR CALCULATING THE CONTACT STRESSES AND RADIAL DISPLACEMENTS.
FACILITY: AKADEMIIA NAUK ARMIAANSKOI SSR, INSTITUT MATEMATIKI I
MEKHANIKI, YEREVAN, ARMENIAN SSR.

1/2 009
TITLE--GELATIN AND GLUE -U-

UNCLASSIFIED

PROCESSING DATE--16OCT70

AUTHOR--(02)-BABLOYAN, D.O., YAZYKOV, V.K.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,576

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--03MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GLUE, GEL, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1086

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116552

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2

009

CIRC ACCESSION NO--AA0116552

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GELATIN AND GLUE, WITH
DESTRUCTION, SAPON., AND REMOVAL OF FATTY BY PRODUCTS AND PREPN. OF
COLLAGEN FOR EXTN., IS PREPD. BY TREATING PULVERIZED GLUE GELATIN RAW
MATERIAL WITH AN ALK. SODA SOLN. AFTER PICKLING, WASHING, AND
NEUTRALIZING. THEN THE MATERIAL IS FURTHER WASHED, NEUTRALIZED, AND
TREATED IN THE USUAL MANNER.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—COMPARATIVE CHARACTERISTICS OF SOME TYPES OF ANESTHESIA AFTER
ACTIVITY OF SERUM LACTATEDEHYDROGENASE ISOENZYMES -U-
AUTHOR—(05)—DANILENKO, M.V., BORZHIYEVSKIY, TS.K., BABLYAK, D.YE.,
KALINGVSKAYA, L.S., LUCHKO, A.S.
COUNTRY OF INFO—USSR
SOURCE—VRACHEBNOYE DELU, 1970, NR 4, PP 139-142 **B**
DATE PUBLISHED—70
SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS—ANESTHESIA, LACTATE DEHYDROGENASE, STOMACH, SURGERY, LIVER
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1699 STEP NO--UR/0475/70/000/004/0139/0142
CIRC ACCESSION NO--AP0129069
UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0129069
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

IN PATIENTS UNDERGOING GASTRIC RESECTION WITH THREE TYPES OF ANESTHESIA. LACTATEDEHYDROGENASE WAS STUDIED
IT WAS FOUND THAT ALTERATIONS OF TOTAL LACTATEDEHYDROGENASE INDEPENDENT
OF THE FORM OF ANESTHESIA ARE CONNECTED WITH CHANGES OF ITS LIVER
FRACTION. THE DYNAMICS OF LIVER LACTATEDEHYDROGENASE LARGELY DEPENDED
ON THE ANESTHESIA TYPE. IN THIS RESPECT TRICHLOROETHYLENE PROVED MORE
SPARING THAN CHLOROFORM AND CYCLOPROPROPANE. FACILITY:
L'VGVSКОГО МЕДИТСІНСКОГО ІНСТИТУТА.

UNCLASSIFIED

USSR

UDC: 621.791:62-415.62-42

1
KOCHUKOV, N. S. (Candidate of Technical Sciences), SMIRNOV, I. V.
(Technician), BOGDANOV, YE. M., BABONIN, I. V. and SEMERIKOV, N. V.
(Engineers)

"Welding of Tee and Multi-Tee Sections From Sheet Metal"

Moscow, Svarochnoye proizvodstvo, No 12, Dec 71, pp 29-31

Abstract: Thin-walled tee shapes are finding ever-increasing application on account of lighter weight and greater rigidity. The recent trends and techniques of producing tee structures include automatic argon arc welding. Discussed here is the method of full-penetration welding to produce a convex (reinforced) weld (over 2 mm thick) successfully tested on various sheet materials (0.6-2 mm thick), including steels and alloys 1Kh18N9T, VZh-102, VNS-16, EI435, OT4-1, VT-5. The weld strength is rated on the basis of tensile and tear tests of the welded flange. In tensile tests the failures occurred along the transition zone; the tear-induced failures were in the parent metal indicating the significance of the reinforced weld.

1/2

USSR
KOCHUKOV, N. S. (Candidate of Technical Sciences), et al, Svarochnoye
proizvodstvo, No 12, Dec 71, pp 29-31

Complete adherence of parts to be welded is facilitated by the use of rolls
enabling greater productivity at lower expenditures for assembly and welding
jigs. (7 illustrations, 1 table).

2/2

- 79 -

Molecular Physics

UDC: 539.219.3:669.01

USSR

ARKHANOV, V. I., Academician of the Academy of Sciences of the UkrSSR,
BABOSYUK, A. I., BALANAYEVA, N. O., BOHOSLOVS'KYY, V. M., KOVALENKO,
L. D., STAFYEYEV, N. M., Donetsk Physicotechnical Institute, AS UkrSSR

"Investigation of the Kinetics of Growth of Layers in Two-Phase Scales"

Kiev, Dopovidi Akademii Nauk Ukrain's'koi URSR, Seriya A: Fizyko-
-Tekhnichni ta Matematychni Nauki, No 4, Apr 71, pp 341-344

Abstract: The authors investigate the kinetics of growth of layers of scale formed when Armco iron is oxidized at a temperature of 540°C and when cobalt is oxidized at 650°C. It is shown on the basis of experimental data that a layer of Fe_3O_4 forms when iron is oxidized in air, while the Fe_2O_3 layer on iron remains practically unchanged after a certain thickness is reached. In the case of cobalt, an increase is observed in the thickness of the Co_3O_4 layer, while the thickness of the CoO phase remains constant. These results are attributed to the imperfection of the oxides from which the scale is formed and to the collective participation of atoms in matter transfer.

1/1

Acc. Nr: **0040340**
AP

B
Ref. Code: *UR 0481*

PRIMARY SOURCE: Eksperimental'naya Khirurgiya i Anesteziologiya,
1970, Nr / , pp 85-87

THE CHANGE OF SH-GROUPS CONTENT IN BLOOD SERUM UNDER
THE INFLUENCE OF PARARENAL NOVOCAIN BLOCK

Zayets, T. L., Bab'skaya, Yu. Ye.

It is shown that the effect of pararenal novocain block on the structure of blood proteins is caused by injection of novocain into the pararenal region. Administration into the same zone of saline produces no changes in the titer of SH-groups in serum proteins. Administration of novocain intravenously and intramuscularly likewise produces no effect on SH-groups of serum proteins.

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REEL/FRAME
19741775

02. kc

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002200230003-9

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002200230003-9"

UNCLASSIFIED

PROCESSING DATE--NOV 70

2/2 022

CIRC ACCESSION NO--AP0129069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LACTATEDEHYDROGENASE WAS STUDIED IN PATIENTS UNDERGOING GASTRIC RESECTION WITH THREE TYPES OF ANESTHESIA. IT WAS FOUND THAT ALTERATIONS OF TOTAL LACTATEDEHYDROGENASE INDICATE OF THE FORM OF ANESTHESIA ARE CONNECTED WITH CHANGES OF ITS LIVER FRACTION. THE DYNAMICS OF LIVER LACTATEDEHYDROGENASE Largely DEPEND ON THE ANESTHESIA TYPE. IN THIS RESPECT TRICHLOROETHYLENE PROVED MORE SPARING THAN CHLOROFORM AND CYCLOPROPROPANE. FACILITY:
L'VOVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

1

USSR

UDC: 621.791:62-415.62-42

KOCHUKOV, N. S. (Candidate of Technical Sciences), SMIRNOV, I. V.
(Technician), BOGDANOV, YE. M., BAEONIN, I. V. and SEMERIKOV, N. V.
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1/2

USSR
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proizvodstvo, No 12, Dec 71, pp 29-31

Complete adherence of parts to be welded is facilitated by the use of rolls
enabling greater productivity at lower expenditures for assembly and welding
jigs. (7 illustrations, 1 table).

2/2

- 79 -

Molecular Physics

USSR

UDC: 539.219.3:669.01

ARKHANOV, V. I., Academician of the Academy of Sciences of the UkrSSR,
BABOSYUK, A. L., BALANAYEVA, N. O., BOHOSLOVS'KYY, V. M., KOVALENKO,
L. D., STAFYEYEVA, N. M., Donetsk Physicotechnical Institute, AS UkrSSR

"Investigation of the Kinetics of Growth of Layers in Two-Phase Scales"

Kiev, Dopovidi Akademii Nauk Ukraini'koi URSR, Seriya A: Fizyko-
-Tekhnichni ta Matematychni Nauki, No 4, Apr 71, pp 341-344

Abstract: The authors investigate the kinetics of growth of layers of scale formed when Armco iron is oxidized at a temperature of 540°C and when cobalt is oxidized at 650°C. It is shown on the basis of experimental data that a layer of Fe_3O_4 forms when iron is oxidized in air, while the Fe_2O_3 layer on iron remains practically unchanged after a certain thickness is reached. In the case of cobalt, an increase is observed in the thickness of the Co_3O_4 layer, while the thickness of the CoO phase remains constant. These results are attributed to the imperfection of the oxides from which the scale is formed and to the collective participation of atoms in matter transfer.

1/1

Acc. Nr: 0040340
AP

B

Ref. Code: UR 0481

PRIMARY SOURCE: Eksperimental'naya Khirurgiya i Anesteziologiya,
1970, Nr 1, pp 85-87

THE CHANGE OF SH-GROUPS CONTENT IN BLOOD SERUM UNDER
THE INFLUENCE OF PARARENAL NOVOCAIN BLOCK

Zayets, T. L., Bab'skaya, Yu. Ye.

It is shown that the effect of pararenal novocain block on the structure of blood proteins is caused by injection of novocain into the pararenal region. Administration into the same zone of saline produces no changes in the titer of SH-groups in serum proteins. Administration of novocain intravenously and intramuscularly likewise produces no effect on SH-groups of serum proteins.

//

REEL/FRA
19741775

02. bc

USSR

UDC 532.529.1

BABUKHA, G. D., SEMYKOVSKAYA, P. T., and SHRAFER, V. A.,
Institute of Technical Thermophysics of the Academy of Sciences
of the Ukrainian Soviet Socialist Republic

"Experimental Investigation of the Interaction of Liquid Drops"

Kiev, Gidromekhanika, No 18, 1971, pp 75-79

Abstract : The experimental investigation of the stability of a motionless big drop, the "target", by its collisions with small drops, the "shells", of different size, flying out from a rotating capillary with different speeds, is described. The experiments were carried out within the range of $12 < Re < 200$, $10^{-3} < G < 0.5$, where G is the stability criterion

$$G = \frac{\eta^2}{6\sigma\langle\delta_i\rangle}$$

and η , σ , and $\langle\delta_i\rangle$ are the dynamic viscosity, density, and skin stress coefficient and $\langle\delta_i\rangle$ = average size of the target-drop. From the processing of experimental data by the method of least

1/2

USSR

BABUKHA, G. L., et al., *Gidromekhanika*, No 18, 1971, pp 76-79

squares, the relation of the dimensionless parameter β , characterizing the summary effect of collisions, $\beta = 0.574 - 0.019 \text{Re}^{0.4}$ was determined. The relation shows that by $\text{Re}^{0.4} < 35.5$, the average effect of collisions is negative, that is, a breaking of drops is predominant in this region. Two illustr., four formulas, three biblio. refs.

2/2

. 61 .

USSR

ALEKSEYEV, M. A., ^{BABULEV} BABUEV, B. F., KUZ'MINSKIY, V. A.

"The Stability of the Laminar Boundary Layer with Supersonic Flow Velocities"

Uch. Zar. Tsentr. Aerogidrodinam., In-ta., [Scientific Writings of the Central Aerohydrodynamic Institute], 1971, 2, No 3, pp 53-41. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1B779 from the resume).

Translation: The critical values of surface temperature and velocity of air suction distributed over the surface, corresponding to full stabilization of flow in a laminar boundary layer for small, two dimensional perturbations are calculated for the self-similar solutions of the equations of a compressible laminar boundary layer, similar to the solutions of Faulkner and Scan for an incompressible fluid.

1/1

USSR

~~BABUNASHVILI, M. K.~~; GHITASHVILI, R. Ya. (Tbilisi)

"Optimization of Control in the Movement of a System Toward a Certain Goal"

Moscow, Avtomatika i Telemekhanika; May, 1972; pp 123-7

ABSTRACT: The authors consider a controlled system the goal of which is the attainment of a certain level. A given penalty is assigned for each failure in attaining the goal, and the price of obtaining each complex resource designed to correct a given state as well as the expense connected with determining a given current state of the system are taken into account. The problem of finding the optimal method of control, selection of resources, and time of shut-down minimizing the average losses in the system is analytically stated and solved. The probability characteristics of attaining the goal of the system are studied.

1/1

• USSR

UDC 621.396.47

BAKURIN, V. I., ZAKHAR'YEV, L. N., and LEMANSKIY, A. A.

"Effect of Nonidentical Antennas of a Doppler Velocity Meter on Its Performance Accuracy"

Moscow, Radiotekhnika, Vol 27, No 12, 1972, pp 94-96

Abstract: Formulas found in a previous work on determining the direction corresponding to the spectral gravity center of a signal received by a Doppler velocity meter and effective meter antenna centers were based on the assumption that the receiving and transmitting antennas are identical. This paper examines the validity of such results when the antennas are not identical. It is assumed that the problem is cylindrical, the earth's surface is uneven with uncorrelated irregularities, and the meter moves horizontally. The spectral envelope D at the receiving antenna output is derived for antennas having exponential amplitude distributions from the aperture field irregularities. The centroid of D is derived, and the effective meter antenna centers are then found. These centers have different amplitude-phase distributions, and they are displaced relative to their geometric centers. The formulas are derived for the displacement as a function of a weighted average of the centers of the to aperture point distribution amplitudes which are uniformly distributed at the rear of the aperture to a power level P at the input to the antenna.

USSR

BAKURIN, V. I., et al., Radiotekhnika, Vol 27, No 12, 1982, p. 94-95

for 0.01, 0.02, 0.04, 0.06, and 0.08 power levels. Finally, an equation is presented for the direction of the Doppler spectrum centroid of an incoming signal in terms of the directions of the principal maximums in the receiving and transmitting antenna patterns.

2/2

USSR

UDC: 621.396.671

BABURIN, V. I., ZAKHAR'YEV, L. N., LEMANSKIY, A. A., Active Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"On the Center of Gravity of the Received Signal Spectrum and the Effective Centers of the Antennas in a Doppler Flight Speed Indicator"

Moscow, Radiotekhnika, Vol. 26, No 6, Jun 71, pp 49-54

Abstract: A study is made of the way in which factors leading to asymmetric beam coverage of the ground surface affect the beam direction corresponding to the center of gravity of the Doppler spectrum and the position of the effective centers of the antennas in a Doppler flight speed indicator. Calculation is simplified by considering the cylindrical problem (antenna aperture bounded in one plane and unbounded in the other), assuming a flat rough ground surface with uncorrelated irregularities. It is further assumed that the antenna system of the speed indicator is made up of two identical antennas -- receiving and transmitting -- in a row and operating in the continuous mode. Side deflection of the indicator beam is disregarded. All formulas are derived for the case of horizontal flight. It is found that for certain beam directions and ratios of antenna length to wavelength, the effective centers of the antennas practically coincide with the centers of gravity of the fourth power of amplitude distributions of the field in the antennas. Errors are evaluated. The authors thank V. I. Karandasov for constructive criticism.

AA0043438

Baburina, L. A.

UR 0482

1-70

Soviet Inventions Illustrated, Section I Chemical, Derwent,

229409 PROTEINACEOUS FODDER YEAST is obtained by cultivation of the Candida yeasts in a nutrient medium comprising a vegetable raw material hydrolysate such as e.g., wood hydrolysate as the carbon source. For ensuring increased yield of the proteinaceous fodder yeast and reducing substances, the starting wood is first subjected to the action of gamma-radiation and then pref. thermally treated at 150-200° for 5-60 mins. 10.5.67. as 1156535/28-13, SHARKOV, V.I. et al. Forestry Acad. Leningrad. (1.9.69) Bul. 15/25.4.69. Class 6a, Int. Cl. C 12k.

19761770

AA0043438

AUTHORS: Sharkov, V. I.; Dmitriyeva, O. A.; Baburina, L. A.; Bosenko, A. M.

Leningradskaya Lesotekhnicheskaya Akademiya imeni S. M. Kirova

19761771

2/2

USSR

UDC 621.785.53:661.65:620.172.2

BABUSHKIN, B. V., and POLYAKOV, B. Z., Belorussian Polytechnic Institute

"Residual Stresses in Steel After Saturation with Boron From Melts"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1973, pp 27-30

Abstract: Effects of the phase layer composition, carbon content, tempering temperature, heat treatment, and natural aging on residual stresses of borated U* and 45 steels were experimentally investigated. The residual stresses determined by the electro-tensometer method are discussed, and compared with calculated values. The phase composition was found to affect the distribution of residual stresses. The increase of the carbon content increased the residual stresses in the borated layer at non-electrolytic saturation and decreased it at electrolytic saturation. Maximum residual stresses result with furnace cooling from the borating temperature. Increased cooling rates result in decreased residual stresses; minimum residual stresses were observed after water quenching. Tempering increased the compression stresses in the layer. Natural aging up to nine months has little effect on the distribution of residual stresses. Four figures, one table, seven bibliographic references.

1/1

USSR

UDC 535.375

^{KV}
BABUSKHIN, F. A. (Komi State Pedagogical Institute)

"Combination Scattering of X-Rays in Crystals"

Tomsk, Izvestiya VUZ Fizika (News of the Higher Educational Institutions, Physics), No 9(112), 1971, pp 26-28

Abstract: A quantum theory, based on S-matrix scattering, is given for a general case of combination scattering of X-rays by k-electrons in crystals. In addition to the dipole approximation, the matrix element is calculated. Equations are derived for the angular dependence of combination scattering intensity. The expression for the differential cross section has a Compton-like angular dependence, which differs from that obtained by Mizuno and Ohmura (J. Phys. Soc. Japan, Vol 22, p 445, 1967), who considered only the dipole approximation. The differential cross section equation obtained holds also for polycrystalline substances.

Orig. art. has 5 refs.

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GORELOVA, L.A., BABUSHKIN, M.M.

"Use Of Probability-Statistical Methods For Predicting The Levels Of The Parameters Of Equipment For Growing Epitaxial Layers"

V sb. Novoye v tekhn. poluprovodn. proiz-va (New Semiconductor Production Technology--Collection Of Works), Voronezh, Voronezh University, 1971, pp 49-58 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4869)

Translation: The results are described of work on the use of prediction methods during the conduct of a statistical analysis of the growth processes of equipment for epitaxial layer growth. In the procedure information was processed, including data on the parameters of more than 40 models of units developed in the USSR, USA, Great Britain, and Japan during five years. It is shown that units with cylindrical reaction vessels in which 100 substrates are simultaneously loaded have higher productivity. Probability estimates are given of the parameters of epitaxial units expected in 1975. 7 ref. G.S.

Aerospace Medicine

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BABUSHKIN, V.

"Accelerations in Flight"

Moscow, Aviatsiya i Kosmonavtika, No 2, 1972, p 40

Translation: Acceleration in flight as a mechanical factor negatively influences many physiological systems of a flier's organism. Its primary effects are reflected by an increase of body weight, the displacement of organs and tissues, and the restriction of motor activity which hampers the accomplishment of work tasks. Muscular sensitivity fluctuates and, consequently, there is a significant increase in the force applied to the control levers; the range of movement increases. All this negatively affects, above all, the quality of performance of delicate coordinated movements.

However the major reason for the disruption of the efficiency of a pilot does not lie in the direct effect of acceleration on the "working organs" of the flier, but in its indirect effect on the central nervous system.

As a result of acceleration physical changes arise in the internal medium of an organism, especially in the vascular system. They consist of the

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movement of blood depending on the vector of acceleration into the vessels of the abdominal cavity and the lower extremities, and the reduction of the volume of blood circulating in the vessels of the upper half of the body. The latter leads to a decrease of the blood supply to the brain and in the end to oxygen starvation. The basic reason for the change in physiological functions and the lowering of the efficiency of the flier is the temporarily hypoxic state of the central nervous system and primarily of its highest branch -- the cortex of the brain.

The most evident signs of changes setting in in the central nervous system during acceleration are the visual disturbances: the appearance of a "gray shroud" before one's eyes, the narrowing of one's field of vision, and the complete loss of vision ("the black shroud"). If acceleration continues, and especially if it increases, more serious disorders of the functions of the central nervous system may follow the impairment of vision, right up to a loss of consciousness.

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During impairment of vision the pilot does not lose consciousness and is able to control the aircraft. However such a state can continue for only a few seconds, and with the increase of the gradient of acceleration this time-span decreases. Hence one can consider the impairment of vision a signal for the approach of maximum acceleration. At this stage, in order to prevent loss of consciousness the pilot must increase the tension of the muscles of the abdomen and lower extremities and decrease overload.

The human organism arranged an extensive complex of adapted mechanisms which help it to resist the effects of acceleration up to the absolute limit. Defensive muscular reflexes are of great significance. The tensing of the muscles of the abdomen and the lower extremities prevents the flow of blood into these parts of the body and eases its flow to the heart.

Since the adapted mechanisms of the organism are always under the control of the central nervous system, their activity, naturally, depends upon the system's functional conditions. Consequently, all the factors which adversely affect the functioning of the central nervous system must lead to a decrease of the activity of the compensating mechanisms and, as a result,

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to a lowering of the ability to withstand acceleration. Various illnesses which weaken the general physical condition of the pilot (excessive smoking, consumption of alcohol, nervous-emotional pressure, exhaustion) produce adverse influences on the adapted functions of the organism. Resistance to fatigue, likewise, is decreased by oxygen starvation, a sharp increase in the temperature of the surrounding air, or by flying on an empty stomach. In the last situation not only is impairment of vision possible but also fainting with comparatively minor acceleration. Lengthy absence from piloting an aircraft influences the ability to withstand acceleration because of the loss of preparedness of the compensatory mechanisms of the cardiovascular system. It is also necessary to remember that one must not fly an aircraft and take medicines not prescribed by a doctor, especially just before a flight.

In order to increase the ability to withstand acceleration it is not only necessary to eliminate factors which adversely affect the condition of the healthy flier, but also to strengthen his general physical condition and to increase the activity of all the adapted mechanisms. Special note should
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be taken of physical training. It should be regular and with a singularity of purpose; that is, besides general physical exercises it should include special exercises related to a shift in body position in space and to the creation of stresses of a static-dynamic character (gymnastics, acrobatics, sprint races, etc.). In sports, basketball, volleyball, handball, and tennis are recommended.

While carrying out the recommended exercises it is vital to further exercise the muscles of the abdomen and to develop an efficient method of breathing (to learn while tensing the stomach muscles to transfer respiration from the abdomen to the chest).

The most important stage of the training cycle is flight training. Only while at the controls during systematic flights is it genuinely possible to master the necessary functional coordination of all the compensatory mechanisms which prevent the effects of acceleration.

However the physiological capabilities of pilots may still turn out to be insufficient for the complete utilization of the aero-technical data of

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